



AN EXPERIENTIAL TEACHING AND LEARNING MODULE IN CHINESE MEDICINE: FIELD TRIP

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ABSTRACT

Chinese medicine has been used as one of complementary and alternative medicines in the world. Chinese medicine education is also one of medical professional programs in many countries. Chinese Medicine students should be encouraged to learn not only from textbook but also real life experience. Experiential learning is the key element of educational reform in the University of Hong Kong (HKU) and has been integrated into Chinese Medicine Bachelor program. This article introduced an educational course in Chinese Medicine: field trip, which is a feature experiential education module and outcomes of the teaching and learning in this module in School of Chinese Medicine (HKU) are discussed. Organization and flowchart of field trip were introduced, which include pre-field trip briefing, four cases of field trip activities and assessment approaches. Students' evaluation and feedbacks were reviewed and discussed. Field trip has been shown benefits to students, teachers and the institute, but shortcomings including teacher-student ratio, lack of post-field trip review and self-study setting and incomplete assessment system needs more improvement in future education reform.

KEY WORDS: Chinese Medicine education, field trip, experiential learning, the University of Hong Kong, Chinese Medicine internationalization.

1. Background

Medical education is majorly achieved in three types of teaching environments: classroom, laboratory and fieldtrips. Different from the first two types of environments, in which teaching activities deliver majorly indoor, the fieldtrip application in medical education is composed of various kinds of activities and varies across curriculums. Fieldtrips in medical education allow students at university level to visit natural environment of healthcare-related organizations, industries and even wild fields, where medical students are able to access the real practice of healthcare-associated activities, and develop an active cognitive process to medical practice. This refers to the concept of experiential learning, the process of learning through experience, in which the learner plays an active role by "learning through reflection on doing"[1]. Experiential learning is not a new concept in modern society, as its spirit has been pointed out by philosophers and educationist in ancient times. The Chinese philosopher in Ming Dynasty, Wang Yang Ming has brought out the concept of "knowing and doing are unified". Similarly, "learning by doing" is the central idea in the education theory of John Dewey, who is an influential American philosopher and educationist[2].

Activities of fieldtrip in medical education can be majorly conducted outside the lecture rooms, in what cases the cognitive and affective outcomes of students are difficult to measure and were often neglected by teachers, curriculum developers and researchers in medical education[3]. The outdoor activities of fieldtrip are more often arranged to university-level students who are major in ethnomedicine, particularly in Chinese Medicine, because the medical practice of Chinese Medicine physicians critically involves the use of natural materials, such as medical plants and related pharmaceutical products. Therefore, Chinese materia medica is a very important foundation course of Chinese Medicine[4], which requires students to remember over three hundred Chinese herbs, including their properties, treatment effects and indications.

School of Chinese Medicine (SCM) was established in 1998 and reformed in 2002 to achieve international standard-recognized education of Chinese Medicine in the University of Hong Kong. To keep the originality and characteristics of Chinese Medicine education, in the development of undergraduate Chinese Medicine program, we took the experience of Chinese Medicine higher education institutes in mainland China as reference, as the Chinese Medicine education in mainland China is quite mature and comprehensive after the past 50-year development and practice, and lecture-based learning models are the mainstay of Chinese Medicine education in China. In concrete with Chinese Medicine education in other institutes, we offered course of Chinese materia medica in our program by which students should lay a solid foundation for the knowledge of herbal medicine at the beginning of their study. However, as lecture-based learning was

the only mode for studying Chinese materia medica, and only words and texts can be perceived which is quite boring for students, the teaching outcomes of this course have to be improved. In launching 3-3-4(6) curriculum reform and outcome-based approaches for students learning in HKU, experiential learning was imposed as one of the vital elements in HKU's education to improve the teaching and learning outcomes at any discipline of the university. With the requirement to improve and globalize Chinese Medicine and Chinese Medicine education, knowledge should not be merely obtained from text book but also in real life situation. In this regard, course of Chinese materia medica can be improved with injection of concept of experiential learning, which, as specified, comprises the outdoor fieldtrip activities. What's more, Chinese Medicine is one of Complementary and Alternative Medicine in the world and now becomes more and more popular. The efficacy and adverse effect of Chinese Medicine, particularly Chinese medical herbs (CMH), are of great concern in the world. It's known that the efficacy and safety issue of CMH are associated with the origin of CMH and it's important for Chinese Medicine students to study the origin of CMH outdoor. An experiential teaching and learning module in Chinese medicine education will be a good model for studying origin of CMH and other practical elements in Chinese Medicine.

It was identified by Orin and colleague that there are two major factors that might influence the learning outcomes of a fieldtrip event, the field trip quality and the "Novelty Space" (or Familiarity Index) or students[3]. Unlike the "Novelty space", which consists cognitive, psychological and geographic variables of students, the educational quality of a field trip course can be determined primarily by its structure, learning materials and teaching methods, which are more controllable by teachers and curriculum developers. Here we introduced an outdoor field trip that is integrated as an experiential teaching and learning module into our Chinese Materia Medica course. As a case report, we described the teaching and learning activities in this structured field trip, as well as the teaching and assessment materials. Limitations of this fieldtrip would be discussed and future improvement would be proposed.

2. Field Trip: An Experiential Teaching and Learning Module in School of Chinese Medicine, HKU

2.1 Outline of Field Trip

The field trip study has been developed into a well-tailored course in the School of Chinese Medicine, HKU since 2003. Field trip is part of the course BCHM2109 Field Trip and Chinese Medicine Dispensary Practicum, which is a compulsory summer course for second year students in Bachelor of Chinese Medicine program, HKU. Field trip study is usually held in June every year when all the second year students finish their final exam of Chinese Materia Medica. The

duration of field trip study lasts for about one week. We choose Kunming in Yunnan Province as our field trip destination and it's well known as "Kingdom of Plant". In this course, students are required to attend field trip in Mainland to study Chinese Medicine in the wilds. Field trip is usually led by teachers who specialized in this field. To complete the requirement of field trip, students should participate in all the activities arranged by the School and complete the assignments requested by the teachers.

2.2 Learning outcomes of Field Trip

- to be able to apply theories in practices and understand Chinese medicines comprehensively;
- to understand and learn Chinese medicines through different scenarios;
- to familiarize with the recent situation of Chinese medicines by visiting GLP, GMP and GAP organizations; and
- to understand more about Chinese culture.

All the above course learning outcomes are aligned with the learning outcomes of Bachelor of Chinese Medicine program. Proper teaching and learning activities are designed to help students to achieve course learning outcomes and assessment methods are also set up to measure students' learning outcomes. Figure 1 shows the flowchart of field trip.



FIG.1. Flowchart of field trip.

2.3 Pre-field trip preparation

A 1-hour briefing section by experienced teachers was given for all participants to deliver the details of field trip preparations and the introduction of local culture. The importance, study objectives and assignment of the trip were delivered by teachers in the briefing section. The corresponding field trip information kit was issued for all the participants during the briefing session. Students were allocated into subgroups with 6-8 students per group. Each group was required to bring a camera to take photos of Chinese Medicine herbal plants.

2.4 Field trip study

Subgroup learning has been adopted in the field trip for enhancing the effectiveness and efficiency of experiential education. Students were requested to get involved into all of 4 cases of field trip activities. These 4 cases of activities were designed in accordance to the pre-defined learning outcomes, and fulfilled the interactive element of experiential learning.

Study case1: Study herbal plants in the wild

Location: Herbal gardens in Kunming Botanical Garden and Kunming Horti-Expo Garden;

Activities: All participated students were divided into several groups, each group was equipped with one teacher from Yunnan, who was specialized in herbal plant identification. The teachers had to travel around the herbal garden and introduce herbal plants which were commonly used in Chinese Medicine throughout the trip. Teachers would show the students about the characteristics of the herbal plant and their medical part. Meanwhile, students should work in cooperative groups for taking pictures of the plant and recording teacher's interpretation.



FIG.2. Students are studying herbal plants in the wild.

Study case 2: Study Chinese medicinal material and prepare drugs in pieces in local market

Location: Luo Shi Wan Chinese Medicinal Material Trade Market, Kunming

Activities: There are around 800 stores in Luo Shi Wan Chinese Medicinal Material Trade Market, which sell processed Chinese medicinal material and prepared drugs in pieces produced in Yunnan. Typical Chinese Medicines for trade in the market include Notoginseng Radix and Gastrodiae Rhizoma, which are authentic medicinal herbs in Yunnan. All the students were also divided into different groups and each group was led by one teacher. The teachers showed them how to differentiate Notoginseng Radix and Gastrodiae Rhizoma in different tiers of quality. Students also studied how to identify prepared drugs in pieces in the market under the guidance of the teachers. Students took pictures and notes during teacher's interpretation.



FIG.3. Students are studying Chinese medicinal material and prepare drugs in pieces in local market

Study case 3: Visit GLP, GMP and GAP organization

Location: GLP organization: State Key Laboratory of Phytochemistry and Plant Resources in West China, Kunming Institute of Botany, Chinese Academy of Sciences

GMP organization: Yunnan Baiyao Group Co., Ltd.

GAP organization: Erigeron breviscapus plantation

Activities: As Yunnan has a rich resource of herbal plants, the related GLP, GMP and GAP organizations are very prosperous in Yunnan, which are good examples of modernization and industrialization of Chinese Medicine. All the students would visit the GLP, GMP and GAP organizations during field trip. The first station was State Key Laboratory of Phytochemistry and Plant Resources in West China, which showed students modern research about herbal medicine and the daily life of research scientists. The next station was Yunnan Baiyao Group Co., Ltd, which is one of the most well recognized Chinese pharmaceutical enterprises in Yunnan Province. The company showed students the industrialization of ethic medicine in Yunnan. In the last station, students visited the plantation of Erigeron breviscapus, which is an important herbal drug for the treatment of cardiovascular and cerebral vessel diseases. During the visit, students had a basic understanding about the mode of modern large-scale herbal plant plantation.



FIG.4. Students are visiting GLP, GMP and GAP organization

Study case 4: Visit local hospital and TCM University of mainland

Location: Yunnan Provincial Hospital of Traditional Chinese Medicine (TCM), Yunnan University of Traditional Chinese Medicine

Activities: There is no Chinese Medicine hospital in Hong Kong, TCM practitioner can only practice in clinics. Yunnan Provincial Hospital of TCM is a good place for Hong Kong students to understand how Chinese Medicine treatment is

integrated into modern hospital. All students were guided by hospital administration staff to visit different departments in the hospital, including acupuncture, tuina and infant tuina department. Exploring the TCM museum in Yunnan University of Chinese Medicine, students expanded their knowledge about the development of Chinese Medicine, Chinese medicinal material and the unique ethnic medicine. Our students also communicated with students in Yunnan University of TCM to share their experience in studying Chinese Medicine and enjoyed an informative lecture about Chinese Medicine identification provided by professor from the university.



FIG.5. Students are visiting local hospital and TCM University of mainland

2.3 After field trip

After coming back to Hong Kong from Yunnan, students were required to hand in group report as field trip assignment. Students used their photos and notes taken in the field trip to finish the report. The report was considered as the assessment criteria of the field trip course.

3 Evaluation of the Field Trip Course

After Yunnan field trip, self-administrated questionnaires were distributed to all participated students to collect their feedback of field trip. The following table shows the result of questionnaire from 21 students in 2016 field trip:

Table 1: Students evaluation of 2016 Yunnan field trip

1. Cost of the trip	Too expensive	expensive	neutral	low	Very low
	4.8%	4.8%	38.1%	42.9%	9.5%
2. Accommodation	excellent	good	satisfactory	fair	poor
(a) quality	9.5%	33.3%	42.9%	9.5%	4.8%
(b) location	9.5%	38.1%	28.6%	23.8%	0.0%
3. Transportation arrangement	excellent	good	satisfactory	fair	poor
(a) plane	9.5%	76.2%	4.8%	9.5%	0.0%
(b) coach	9.5%	61.9%	9.5%	19.0%	0.0%
4. Meal arrangement	excellent	good	satisfactory	fair	poor
	19.0%	38.1%	28.6%	14.3%	0.0%
5. How useful did you find the following arrangement in improving your knowledge of Chinese Medicine?	Very useful	useful	Of some use	Of little use	Of no use
(a) Yunnan Baiyao Group Co., Ltd.	14.3%	47.6%	19.0%	19.0%	0.0%
(b) Yunnan University of Traditional Chinese Medicine	23.8%	47.6%	14.3%	9.5%	4.8%
(c) Kunming Botanical Garden	47.6%	38.1%	9.5%	4.8%	0.0%
(d) Yunnan Provincial Hospital of Traditional Chinese Medicine	9.5%	23.8%	38.1%	23.8%	4.8%
(e) Chinese Medicinal Material Trade Market	19.0%	42.9%	23.8%	14.3%	0.0%
(f) TCM Seminar	19.0%	47.6%	23.8%	9.5%	9.5%

6. Pace of the trip	Too fast	fast	About right	slow	Too slow
	0.0%	23.8%	52.4%	19.0%	4.8%
7. Service of tour guide	excellent	good	satisfactory	fair	poor
	23.8%	57.1%	19.0%	0.0%	0.0%
8. Overall design of the trip	excellent	good	satisfactory	fair	poor
	9.5%	61.9%	19.0%	4.8%	4.8%
9. Overall comments on the arrangement of the trip	excellent	good	satisfactory	fair	poor
	23.8%	47.6%	19.0%	4.8%	4.8%

For open-ended comments, students thought that field trip was useful in learning Chinese/Yunnan culture. The comments included "Kunming Botanical Garden and gathering herbs in the wild are helpful for us to know the morphological characteristic of herbal plants", "It's good that each group has a teacher to introduce and explain the herbal plants, which enhanced our knowledge of Chinese Medicine", "Chinese Medicinal Material Trade Market is a good place for us to recognize prepared drugs of pieces", "It's a good experience to communicate with students in Yunnan University of Traditional Chinese Medicine, they introduced us the folk medicine and culture of minority in Yunnan, which expand our horizon." According to students' feedback, they gave positive evaluation about the field trip. They found that the experience was invaluable and enabled them to integrate theory and practice; they considered field trip as a great opportunity for them to experience how Chinese Medicine is practiced in Mainland China; they were glad to have more opportunities to communicate with students in Yunnan University of Chinese Medicine for culture exchange.

4 Advantages, Limitations and Future Improvement of the Field Trip Course

There are several advantages of the field trip course for students, teachers and the institute. For student, field trip brings classroom study alive for them to remember what they have learned in the class. It provides rich resources that cannot be delivered indoors, which can deepen the knowledge that they obtained from textbooks. What's more, students take initiative to self-study on related knowledge from the field trip. For teacher, field trip offers interaction and communication between teacher and students. Teachers have more time to answer each student's specific question in sub-group study and they can deliver more personal study experience to the students. For institute, it is a model curriculum with good organization, concrete objectives and measures, as well as rich teaching and learning materials. The experience in organizing field trip study in Chinese Medicine education deserves to share.

Although the on-site field trip incurs first-hand experiential activities for students to study Chinese Medicine in Mainland China, the current mode of field trip course has come up with some challenges under HKU curriculum reform. First, with increasing group size, teachers are difficult to make sure how each student performs appropriately in the field trip study as more students will join the field trip course in coming years. Second, studying original Chinese Medicine herbal plant in the wild and studying Chinese medicinal material and prepared drugs in pieces in local market are two major activities in field trip, however, perception and knowledge could be only obtained at particular sites during field trip, it's very difficult for students to systemically review what they have learnt during field trip and how this knowledge may link to their future study after field trip. Third, it is not feasible to evaluate the learning outcomes of students after field trip study. Although currently the students are required to have a group report to show what they have learnt from the field trip, it is very limited for teachers to comprehensively assess what students really get. As a result, the current knowledge management of field trip resource for the school/university seems poor and the teachers/students are difficult to give constructive feedbacks in their particular positions in this system, which limits the establishment of standard assessing outcomes of field trip study.

For future development, improvement of field trip course should be made before, during and after field trip activities. Before field trip, study materials should be delivered to students and teachers should brief them how to use for better preparation in field trip activities. During field trip, activities should be better organized and outcome-oriented. After field trip, tutorial sections should be arranged to help students to review what they have learned in field trip. An improved module of Chinese Medicine field trip is in need in the future.

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Disclosure Statement

The authors declare no conflict of interest.

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